

*Gary B. Schneider*

# COAL

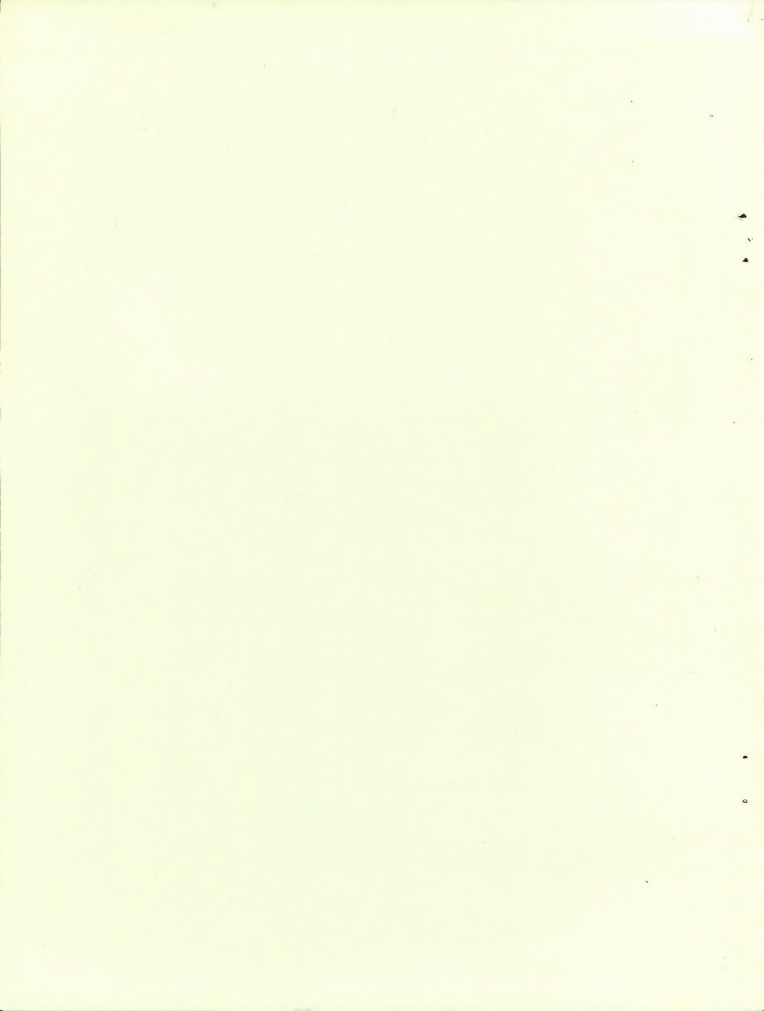


## AN ANALYSIS OF EXISTING FEDERAL COAL LEASES

U.S. DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

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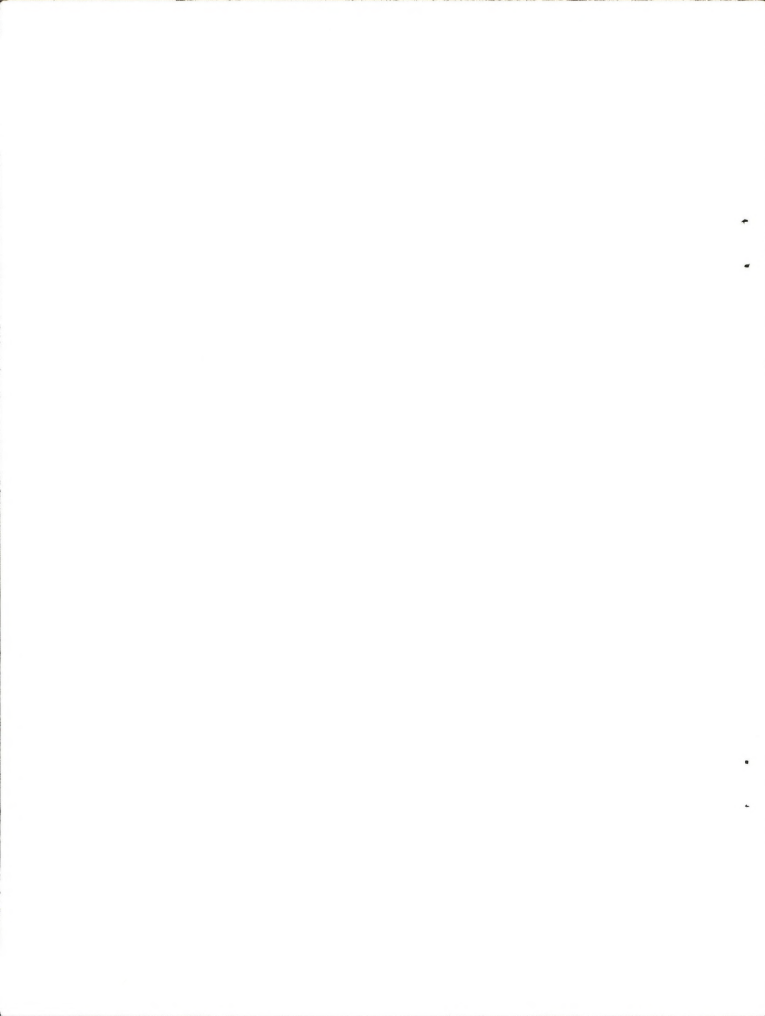
Division of Minerals Management  
Program Development and Analysis  
Bureau of Land Management

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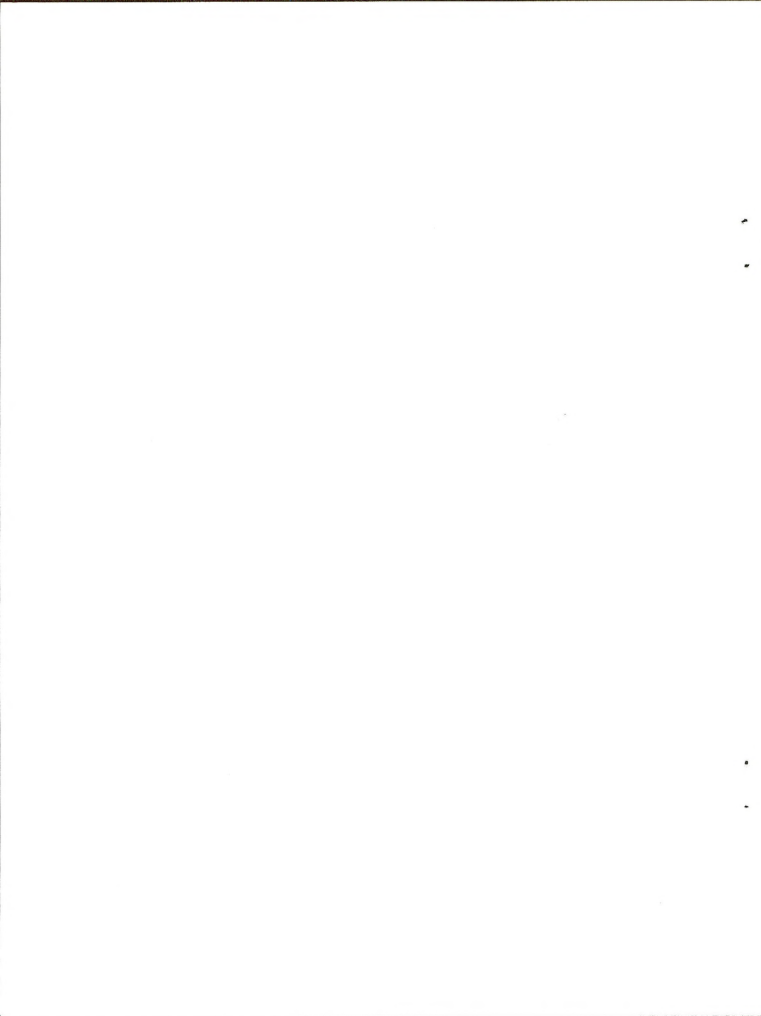
## Table of Contents

	Page
Executive Summary	1
Introduction	3
I. Factors Leading to the Existing Situation	4
II. Quantitative Description of Leases	10
A. Analysis	10
B. Classification Categories	10
C. Currently Producing	11
D. Past Production with Plans for Future Production	13
E. No Past Production, Plans for Future Production	16
F. No Past Production and No Plans for Future Production	19
G. Past Production No Plans for Future Production	21
III. Summary of Lease Categories	23
Conclusion and Interpretation	33
Appendix A, Federal Coal Leaseholders	A-1
Appendix B, Status of Leases by State	B-1



List of Tables

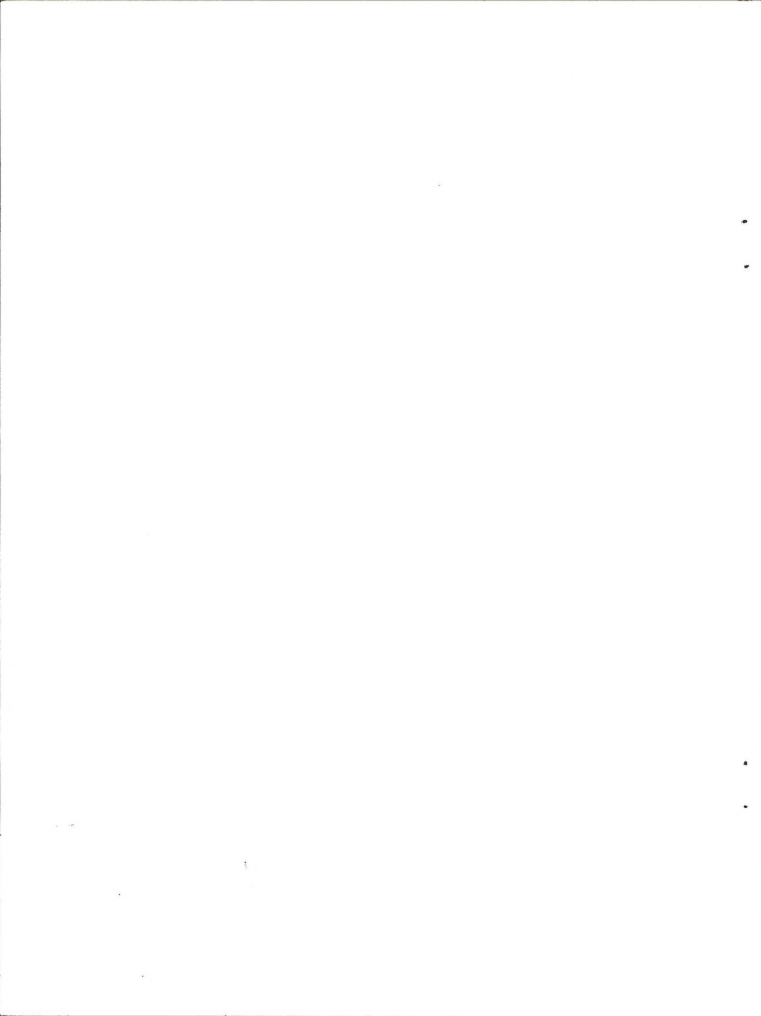
Table	Page
A. Production of Western and U.S. Coal Reserves	7
B. Existing Federal Coal Leases	9
C. Leases Currently Producing	12
D. Leases With Past Production and Plans for Future Production	15
E. Leases With No Past Production but With Plans for Future Production	18
F. Leases With No Past Production and No Plans for Future Production	20
G. Leases With Past Production and No Plans for Future Production	22
H. Status of Leases by Lease Category	24
I. Leases by Lease Category as Percent of Total	25
J. Coal Reserves on Federal Leases	31





### List of Figures

Figure	Page
#1 Comparison of Federal Coal Production with Acreage Under Federal Coal Lease	5
#2 Total Acreage and Private Surface in Each Lease Category	27
#3 Planned Coal Production from Federal Leases	29



## AN ANALYSIS OF EXISTING FEDERAL COAL LEASES

### Executive Summary

Coal constitutes 73 percent of the total known domestic fossil-fuel energy reserves in the United States. Much of the Nation's western coal resource is in the six States of Colorado, Montana, New Mexico, North Dakota, Utah, and Wyoming. The Federal Government owns approximately 60 percent of the coal reserves in this area and influences up to 80 percent of the development because of ownership patterns.

At present, 208 lessees hold 467 Federal coal leases covering 682 thousand acres with an estimated 16.2 billion tons of recoverable reserves in the six State area. Some 217 leases were obtained through the preference right method and 250 through the competitive method. Thirty-eight percent of the lease acreage is in private surface ownership. Two-thirds of the reserves can be recovered through surface mining. The average lease size is about 1,500 acres. Seventy-seven percent of the leases were issued within the past 20 years and 43 percent within the last ten years.

These leases were reviewed with respect to their past, present, and future production and development plans.

Sixty-five of the 467 leases produced over 23 million tons of coal in the past but have no plans for future production. Another 53 currently producing leases mined over 21.5 million tons of coal in 1974, with cumulative production of 129 million tons, and plan to more than double their annual output before 1980. Nearly all of these leases are over 10 years old and most are over 20 years old.

A major finding of the analysis is that over 50 percent of the 467 leases, which are held by 66 lessees, cover 60 percent of the total lease acreage and contain 60 percent of the total coal reserves, have never produced and have not indicated any plans for development of production before 1990. Nearly all of the leases that have no plans for production were issued within the last 20 years and over 60 percent within the past 10 years. The average age is 11 years. The leases average 200 to 300 acres larger than the average size for all leases and are two to four times larger than the average 30 year old leases. Over 60 percent of the leases that have no plans for production were obtained through the preference right method as opposed to the past and currently producing leases which were obtained primarily through competitive bidding. Most of the coal reserves of leases with no production plans are located in Wyoming and is surface recoverable coal. However, over one half of the leases and 27 percent of the coal reserves in this category is located in Utah and is underground mineable.

Production Category	No. of Leases	No. of Lessees	Total Acreage 1000	Total Reserve, Million Tons	Average Age of Lease, Years	Average Size of Lease, Acres
Produced in past only	65	50	28	382	31	435
Producing in 1974	53	39	85	1,606	23	1,665
Produced in past and will in future	31	24	29	349	30	947
No past production but will in future	79	29	129	4,148	12	1,622
Never produced and no plans to	239	66	411	9,681	11	1,734
Total or Average	467	208	682	16,166	16	1,460

## Introduction

Fossil fuels currently provide over 90 percent of the energy that Americans consume. Of this energy consumption, 72 percent is provided by oil and gas, while only 28 percent is from coal. Yet coal constitutes 73 percent of the total domestic fossil-fuel energy bank, while oil and natural gas combined comprise only 10 percent. Oil in oil shale contains 17 percent of the Nation's energy reserve, but technology for commercial scale recovery of this resource has not yet been developed. This along with the effort of achieving self-sufficiency in energy resources would indicate that coal, and particularly the vast, relatively low-sulfur western coal deposits, would assume an increasingly important role as domestic oil and gas reserves are further depleted and longer term solutions to our energy shortages are perfected.

Much of our nation's western coal resource is in the six States of Colorado, Montana, New Mexico, North Dakota, Utah and Wyoming. Development would principally be within these States. Although there are 53 leases in Oklahoma, the coal reserves are small compared to the other six States and would require mostly underground mining, thus extensive coal development would most likely occur in the other six States before it would in Oklahoma. The Federal Government owns approximately 60 percent of the coal resources in the six-State area and influences upwards of 80 percent of the development because of ownership patterns.

At present there are 467 existing Federal coal leases in these six States. These leases total 681,812 acres and contain 16.2 billion tons of recoverable reserves. This report will give the existing situation for the 467 outstanding leases.

## I. Factors Leading to the Existing Situation

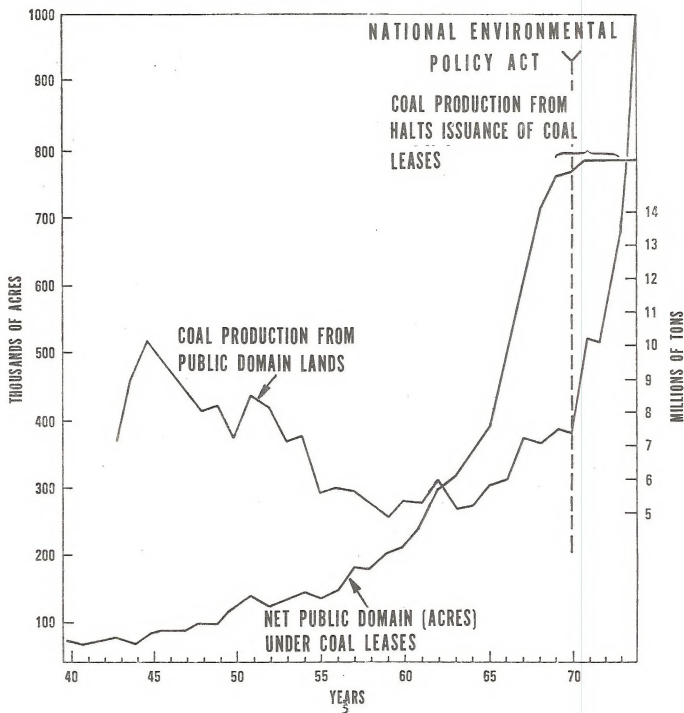
Historically, and until the late 1960's, the Department of the Interior traditionally played a reactive role in leasing federally owned coal, responding to industry applications for coal leases on a case-by-case basis. Subsequent to a coal leases study<sup>1/</sup>, the Department of the Interior halted the issuance of coal leases and prospecting permits to reassess coal leasing policies. The study showed that the acreage of coal under lease on public domain was skyrocketing while production from Federal leases was declining. (Fig. 1). Acreage under lease had increased from about 80,000 acres in 1945 to about 778,000 acres in 1970. Production during this period had declined from about 10 million tons in 1945 to 7.4 million tons in 1970.

Ninety-one and one half percent of the total acreage under coal lease was within non-producing leases. It was also determined that in 1970 761,000 acres of public and acquired lands included within outstanding coal prospecting permits were held principally by coal brokers - not coal producers.

From May 1971 until February 1973, no additional coal leases were issued by the Bureau of Land Management. In February 1973, the Secretary of the Interior announced a new coal leasing policy, which included short-term leasing criteria designed to supply established operators with sufficient reserves to continue operations and supply existing markets. Since that time, eight coal leases have been issued under these criteria and several more are pending final approval.

<sup>1/</sup> Holdings and Development of Federal Coal Leases, Bureau of Land Management, November 1970.

# COMPARISON OF FEDERAL COAL PRODUCTION WITH ACREAGE UNDER FEDERAL COAL LEASE, 1940 - 1974



The production of western coal has begun to increase rapidly, particularly since 1970. This trend is reflected in Federal production statistics. Figure 1, shows the acres under Federal lease with annual production from Federal leaseholds. Note how rapidly production from Federal leases has increased within the last several years. During this period the acreage under lease has remained almost constant. The increase is due primarily to (1) increasing demand for low-sulfur coal to meet air pollution requirements, (2) increasing consumption of electrical energy with a corresponding increase in the use of coal to fuel base load electric generation plants, (3) a shift in the relative price of delivered coal-derived BTU's.

The relative importance of coal production from federally leased vs. State and privately owned land in the six States had been declining until 1970. Table A shows that coal production from federally leased reserves was 30 percent of total western production in 1960. This percentage decreased steadily until 1972 when production from Federal leaseholds was only 20 percent of the western States' production. 1/ This trend is particularly significant considering that the Federal Government owns approximately 60 percent of the western coal resources. If ownership patterns are considered, the Federal Government controls or influences development of upwards of 80 percent of western coal resources. Less than 5 percent of federally owned coal resources have been leased.

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1/ Most growth in recent years in western low-sulfur coal production has come from Indian land. Production from Indian land in 1960 amounted to one percent of the total production. This has expanded to about 17 percent in 1972.



Table A. Production of Western and U.S. Coal Resources, 1960, 1965  
1971, 1972, 1973 and 1974

Sector	Actual					
	1960	1965	1971	1972	1973	1974
U.S. total, Million tons <u>a/</u>	415.5	512.1	552.2	595.4	591	590
Western States, Million tons <u>b/</u>	13.7	19.4	38.7	44.3	51.7	65.6
Percent	3%	3%	7%	7%	8%	11%
Federal Land, Million tons <u>c/</u>	4.2	4.9	9.1	8.8	12.9	21.53
Percent of Western States	30%	25%	23%	20%	25%	33%

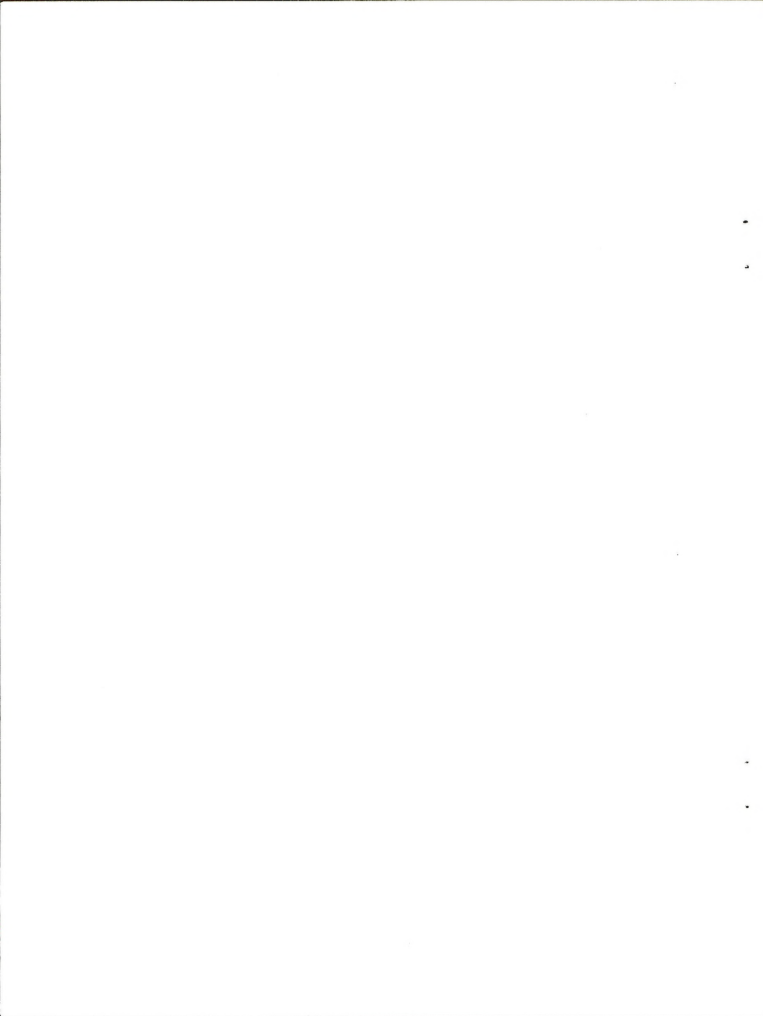
- (a) Dupree, Walter G., and James A. West, U.S. Energy Through the Year 2000. U.S. Department of the Interior, Washington, D. C., December, 1972. Bituminous Coal Facts, 1972, National Coal Association, Washington, D. C., 1973 and BOM 1974.
- (b) The six western States included in this report, Wyoming, New Mexico, Utah, North Dakota, Montana, Colorado. Broderick, Grace N., Supply and Demand for Energy in the U.S. by States and Regions, 1960 and 1965, 1. Coal Bureau of Mines Information Circular 8401, 1969. U.S. Energy Fact Sheets By States and Regions, U.S. Department of the Interior, Washington, D. C., February, 1973. Tonnage based on Fiscal Year figures.
- (c) Public Land Statistics. Bureau of Land Management, U.S. Department of the Interior, Washington, D. C., 1960, 1965, 1971, 1972, and 1973. Tonnage based on Fiscal Year Figures 1974 data Geological Survey.

Table B provides background data on existing Federal leases. Presented is information on surface and subsurface ownership, number of leases, number of lessees, type of lease acquisition, age distribution of leases, and production. It is interesting to note that 40 percent of existing leaseholds in all 15 States in Table B have been issued within the last 10 years. However, a minimum of 5 years is normally required to bring a lease into production, so we cannot expect many of these leases to be currently producing.

TABLE B - EXISTING COAL LEASES

	Acreage		Type of Leases				Production (Tons) 1/		Less Than 5	Age, Years					Greater Than 40
	Total	Private Surface	Leases	Lessees	Preference Right	Competitive	1974	Cumulative to 1973		5-10	10-20	20-30	30-40		
Alabama	2,388.24	200.00	1	2	0	1	0	1,551,018	1	0	0	0	0	0	
Alaska	2,674.60	1,073.14	4	2	4	0	141,627	17,759,639	0	0	1	2	0	1	
California	80.00	0	1	1	1	0	0	1,257	0	0	0	0	1	0	
Colorado	121,470.83	54,606.51	113	38	56	57	2,312,121	39,379,466	1	41	40	9	10	12	
Kentucky	1,644.00	0	2	2	1	1	302,383	0	2	0	0	0	0	0	
Montana	36,232.27	34,967.19	17	12	3	14	4,486,418	24,974,424	1	6	6	1	1	2	
New Mexico	40,958.12	26,197.78	28	16	18	10	1,053,218	3,898,827	0	6	13	1	5	3	
North Dakota	16,235.75	16,275.75	18	9	2	16	981,878	26,200,422	2	4	8	2	0	2	
Ohio	144.15	0	1	1	0	1	0	489,461	0	1	0	0	0	0	
Oklahoma	87,013.56	85,692.34	53	10	39	14	227,482	6,622,041	0	11	32	10	0	0	
Oregon	5,403.18	241.00	3	2	3	0	203	19,218	0	0	3	0	0	0	
Pennsylvania	80.29	0	2	1	0	2	0	0	2	0	0	0	0	0	
Utah	268,555.39	13,325.00	199	41	104	95	3,152,353	94,684,674	5	90	55	18	17	13	
Washington	521.00	521.09	2	1	1	1	139,246	1,053,337	1	0	1	0	0	0	
Wyoming	199,944.56	117,219.84	92	29	34	58	9,539,571	75,008,824	7	34	38	4	3	6	
Total	781,763.66	350,329.64	536	167	266	270	22,336,500	291,642,608	23	193	197	47	37	39	

1/ Includes production from past leases which are no longer outstanding leases.



## II. Quantitative Description of Leases

### A) Analysis

The analysis consist of presenting the current situation of outstanding Federal coal leases for the six western coal States of Colorado, Montana, New Mexico, North Dakota, Utah and Wyoming. The past, the present and the indicated future performance of these leases are shown. Acreage, ownership, lease type, age and past production obtained from BLM records, and reserves, and past, present and future production obtained from Geological Survey by lessee questionnaires make up the base data for the analysis.

### B) Classification Categories

The leases are classified on their past, present and future performance with respect to production. The leases are in five classes; currently producing (CP), leases with past production and plans for future (PP, FP), leases with past production, but with no plans for future (PP), leases with no past production, but plans for future production (FP), and those leases with no past production and no indicated plans for the future (NP).

The classification of leases according to their future production plans is based upon leaseholders' voluntary response to a questionnaire. Therefore, we caution the reader that the indicated production plans for a lease may be a tenuous classification. For example, those leases categorized as not having future plans, means only that the questionnaire respondent did not indicate any production plans. It is not certain that the leaseholder does not have any production plans, it only means that he did not reveal any plans. Nevertheless, all leaseholders who did not indicate their future production plans were identified as planning no production before 1990.

C) Currently Producing (CP)

Leases that are currently producing are those leases that had production in 1974. Table C, gives the current situation for those leases now producing for the six coal States. In 1974 there were 53 leases producing 21.53 million tons of coal. This amounts to 11.40 percent of outstanding leases ranging from 7 percent of the leases in New Mexico and Utah to 35 percent of the leases in Montana. Cumulative production from these currently producing leases is 70 percent of the past production of all Federal leases. Future indicated production for these leases shows an increasing rate with current production more than doubling by 1980. Production then levels off at two times the 1975 rate and decreases somewhat by 1990. Over all, production from these CP leases is a decreasing percentage of total production to 1990, dropping from 100 percent in 1974 to 38 percent of all Federal production by 1990.

Other aspects of those leases currently producing are quite interesting. The 53 leases are held by 39 lessees. Over 83 percent of the producing leases were obtained by competitive methods. Private surface ranges from 21 percent in Wyoming to 100 percent in North Dakota with an overall average of 46 percent for the 85,085.76 acres in producing leases. Approximately 50 percent of the leases are mineable by surface and 50 percent by underground methods. Recoverable reserves associated with the mining method on the other hand, shows that 67 percent of the reserves are mineable by surface methods and 33 percent by underground. Eighty-one percent of the leases are over 10 years old with 45 percent being over 20 years old.

TABLE C - LEASES CURRENTLY PRODUCING (CP)

States	No. Leases	No. Leases	Type Lease	Total Acreage	Private Surface, Acres	Mining Methods		1974 Production (Tons)	Accum. Prod. (Mill. Tons)	Planned Production (Mill. Tons)				Reserves (Mill. tons)		Age of Leases, years					
						No. Leases	U			1975	1980	1985	1990	S	V	Less than 5	5-10	10-20	20-30	30-40	Greater Than 40
Colorado	14	11	3 11	14,890.14	7,204.95	2	12	2,312,121	20.20	1.65	6.26	7.35	6.09	31.11	245.66	1	1	4	1	4	3
Montana	6	5	1 5	10,928.65	10,528.65	6	0	4,486,618	22.96	8.50	15.50	15.70	13.70	306.56	0	1	0	4	0	0	1
New Mexico	2	2	2 0	4,952.36	4,272.36	2	0	1,053,218	1.23	1/	1/	1/	1/	1/	1/	0	0	2	0	0	0
North Dakota	4	3	0 4	4,997.44	4,997.44	4	0	981,878	13.02	1/	1/	1/	1/	1/	1/	1	0	1	1	0	1
Utah	14	10	0 14	18,331.65	5,530.07	0	14	3,152,353	41.25	3.64	4.60	4.63	4.94	0	144.0	1	1	3	4	2	3
Wyoming	13	8	5 10	30,905.66	6,000.42	13	0	9,539,571	30.12	7.95	25.31	25.26	19.67	562.10	178.30	1	3	5	1	0	3
Total	53	39	9 44	85,085.76	39,333.89	27	26	21,525,559	128.78	27.65	55.23	55.05	45.71	1038.44	507.96	5	5	19	7	6	11

1/ Due to small number of leases reserve and production figures deleted so as to not reveal possible proprietary information.





D. Past Production with Plans for Future Production (PP,FP)

Leases with past production and with plans for future production are those leases that have produced in the past and for some reason halted production prior to 1974. The lessees have indicated that the leases will produce in the future. Within this classification there are 31 leases held by 24 lessees - Table D. Montana has no leases in this category. Twenty-four of the leases were obtained competitively.

Total acreage within this category is 29,359.95 acres, of which 34 percent is private surface. Average lease size ranges from 627 acres in Colorado to 2570.0 acres in New Mexico with a mean size for all leases of 947 acres. Private surface ranges from 80 acres per lease in Utah to 1,978.19 acres in New Mexico. The average being 326.45 acres per lease for all leases.

Total accumulative tonnage produced from these leases is 32 million tons from 7 surface mineable leases and 24 underground mineable leases. Recoverable reserves associated with the mining method are 260.39 million tons by underground methods and 88.26 million tons by surface methods. This averages 12.6 million tons per surface mine and 10.8 million tons per underground mine. Ranges are from 20.77 million tons per lease in North Dakota to 6.2 million tons per lease in Utah for surface and 5.75 million tons per lease in Colorado to 19 million tons per lease in Wyoming for underground mining.

Indicated future production from these leases will increase until 1985 and than drop to below the 1975 level by 1990. The number of

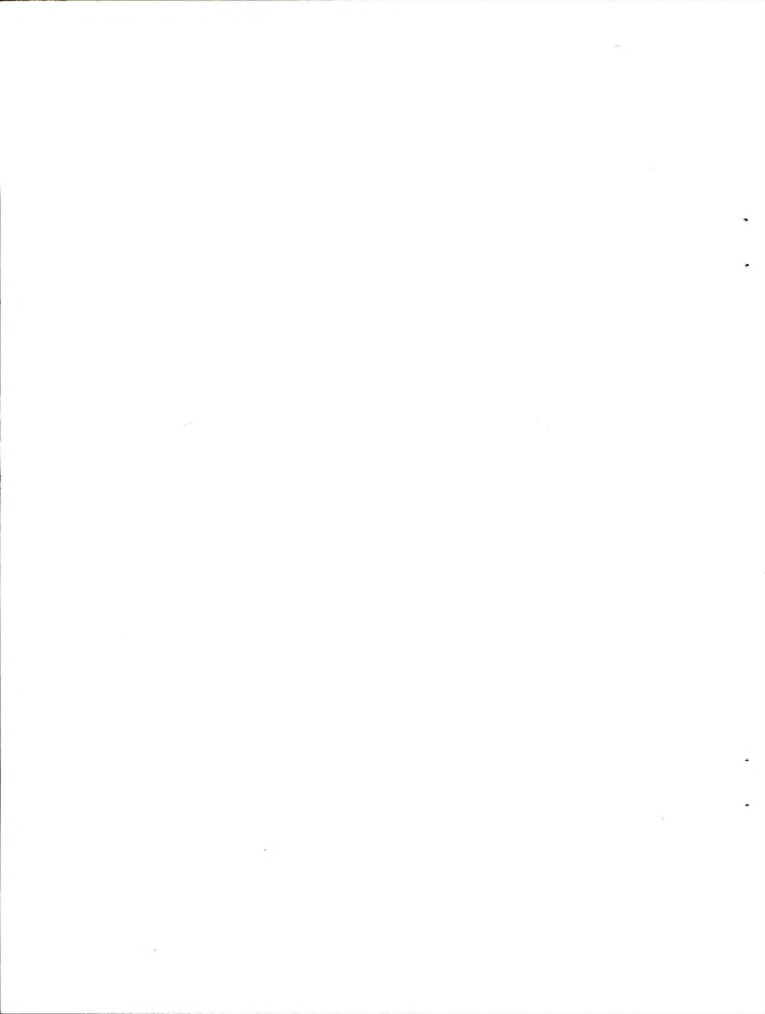
leases producing during this time span follows the same trend. By 1975 23 of these leases will be producing 10.5 million tons, by 1980 28 leases will be producing 11.44 million tons, by 1985 29 leases will be producing 14.59 million tons and by 1990 only 15 leases will be producing 8.44 million tons.

At present the age of these leases vary widely but the average is 21 plus years old. Thirty-two percent are over 40 years old and an additional 36 percent over 20 years old. Only three leases are less than 10 years old.

TABLE - D LEASES WITH PAST PRODUCTION AND PLANS FOR FUTURE PRODUCTION (PP,FF)

States	No. Leases	No. Lessees	Type Lease		Total Acreage	Private Lease Acres	Mining Method		Accum. Prod. (Mill. Tons)	Planned Production				Reserves (Mill. Tons)		Less Than 5	Age of Leases Years					Greater Than 40
			PR	Comp.			S	U		1975	1980	1985	1990	S	U		5-10	10-20	20-30	30-40		
Colorado	15	13	5	10	9,410.51	3,835.92	0	15	3.31	2.21	5.88	8.24	5.27	18.48	86.34	0	0	3	4	3	5	
Montana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
New Mexico	1	1	1	0	2,570.13	1,978.19	1	0	0.71	<u>1/</u>	<u>1/</u>	<u>1/</u>	<u>1/</u>	<u>1/</u>	<u>1/</u>	0	0	1	0	0	0	
North Dakota	2	2	0	2	2,726.02	2,726.02	2	0	1.00	<u>1/</u>	<u>1/</u>	<u>1/</u>	<u>1/</u>	<u>1/</u>	<u>1/</u>	0	0	1	1	0	0	
Utah	10	6	1	9	12,221.75	800.00	2	8	24.09	1.38	4.49	5.28	2.10	6.20	155.35	0	2	0	2	3	3	
Wyoming	3	2	0	3	2,431.54	680.00	2	1	2.88	<u>1/</u>	<u>1/</u>	<u>1/</u>	<u>1/</u>	<u>1/</u>	<u>1/</u>	0	0	1	0	0	2	
Total	31	24	7	24	29,359.95	10,020.13	7	24	32.00	10.51	11.44	14.59	8.44	88.26	260.39	0	3	6	6	6	10	

1/ Due to small number of lessees reserve and production figures deleted so as to not reveal possible proprietary information.



E. No Past Production, Plans For Future Production (FP)

Leases with no past production but with plans for future production are those outstanding leases which have had no production since becoming a lease, but the lessees have indicated plans for producing in the near future. Within this classification there are 79 leases held by 29 lessees. Montana and North Dakota have no leases in this category. Of the leases held, 43 were obtained competitively and 36 were obtained by preference right methods - Table E.

Total acreage within this category is 128,112.64 acres. Average lease size for this category is 1,621.67 acres. This ranges, on the average of 1212.04 acres per lease in Colorado to 4,692.07 acres per lease in Wyoming. On the average a lease has 755.27 acres of private surface. Private surface ranges from no private surface in Utah to 2883.34 acres per lease or 61 percent of total acres under lease in Wyoming. Of these outstanding leases, 18 are considered mineable by surface mining methods and 61 by underground methods. Similarly the recoverable reserves associated with these mining methods are 3,033.17 million tons by surface methods and 1,114.49 million tons by underground methods. This yields an average of 168.50 million tons per surface mine and 18.27 million tons per underground mine. Ranges are from 19.65 million tons per lease in Utah to 535.49 million tons per lease in Wyoming for surface mineable reserves and 16.66 million tons per lease in Colorado to 34.15 million tons per lease in Wyoming for underground reserves.

Indicated future production from these leases shows a dramatic increase. Production is indicated to increase almost 10 fold by 1980 from 6.12 million tons in 1975 to 59.06 million tons by 1980, The largest increase is in Wyoming which jumps from 1.03 million tons by 1975 to 39.21 million tons by 1980. A much smaller increase is seen overall between 1980 and 1985 when production increases to 75.49 million tons. From 1985 there is a decrease to 64.9 million tons by 1990. The decrease is caused primarily by no production in New Mexico and a 5.9 million ton decrease in production in Colorado by 1990. This same trend is seen in the number of leases anticipating producing at these times; 41 leases producing by 1975, 76 leases producing by 1980, 77 leases producing by 1985 and only 58 leases producing by 1990.

Ninety-seven percent of these leases are less than 20 years old. Only 2 leases are younger than 5 years old, 33 leases are 5-10 years old and 42 leases are 10-20 years old, 2 leases are over 20 years old. In all, it can be seen that these leases are relatively young.

TABLE E - LEASES WITH NO LAST PRODUCTION BUT WITH PLANS FOR FUTURE PRODUCTION (FP)

States	No. Leases	No. Lessees	Type Lease		Total Acreage	Private Surface, Acres	Mining Method		Planned Production (Mill. Tons)				Reserves (Mill. Tons)		Less Than 5	Age of Leases Years				Greater Than 40
			PR	Comp.			No. S	Leases U	1975	1980	1985	1990	S	U		5-10	10-20	20-30	30-40	
Colorado	56	17	30	26	67,875.67	35,959.15	4	52	4.32	12.14	19.72	14.06	182.74	866.33	0	28	27	1	0	0
Montana	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
New Mexico	2	1	0	2	4,365.60	641.00	2	0	<u>1/</u>	<u>1/</u>	<u>1/</u>	<u>1/</u>	<u>1/</u>	<u>1/</u>	0	0	0	0	0	0
North Dakota	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
Utah	13	6	0	13	18,334.75	0	7	6	0.77	6.96	9.66	8.13	137.60	145.70	1	1	10	1	0	0
Wyoming	8	5	6	2	37,536.62	23,066.77	5	3	<u>1/</u>	<u>1/</u>	<u>1/</u>	<u>1/</u>	<u>1/</u>	<u>1/</u>	1	4	3	0	0	0
Total	79	29	36	43	128,112.64	59,666.92	18	61	6.12	59.06	75.49	64.90	3,033.17	1,114.49	2	33	42	2	0	0

1/ Due to small number of lessees reserve and production figures deleted so as to not reveal possible proprietary information.





F. No Past Production and No Plans For Future Production (NP)

Leases with no past production and with no plans for future production are those leases which have not produced in the past and have not indicated any plans for future production. Within this classification there are 239 leases owned by 66 lessees. Of these leases, 141 were obtained by the preference right method and 98 competitively - Table G. Total acreage within this category is 411,011.52 acres. This averages 1,720 acres per lease ranging from an average of 964 acres per lease in North Dakota to 3,137.95 acres per lease in Montana. Private surface totals 149,447.15 acres averaging 630.57 acres per lease, ranging from 37 acres per lease in Utah to 3,039.80 acres per lease in Montana.

There are 85 leases mineable by surface mining methods and 152 mineable by underground methods. Reserves associated with those leases by mining methods are 6,485.50 million tons recoverable by surface and 3,195.78 million tons by underground methods. The reserves per surface mineable lease on the average is 76.30 million tons and by underground 21.02 million tons. The range of which for surface recoverable reserves is 7.08 million tons in Utah to 138.56 million tons in Wyoming and for underground recoverable reserves is from 11.77 million tons in New Mexico to 23.56 million tons in Utah.

The age of the leases in this category tend to be within their initial 20 year term. Only 2 percent are less than 5 years old. This is balanced by 2 percent over 20 years old. Of the 239 leases 138 are 5-10 years old and 84 are 10-20 years old.

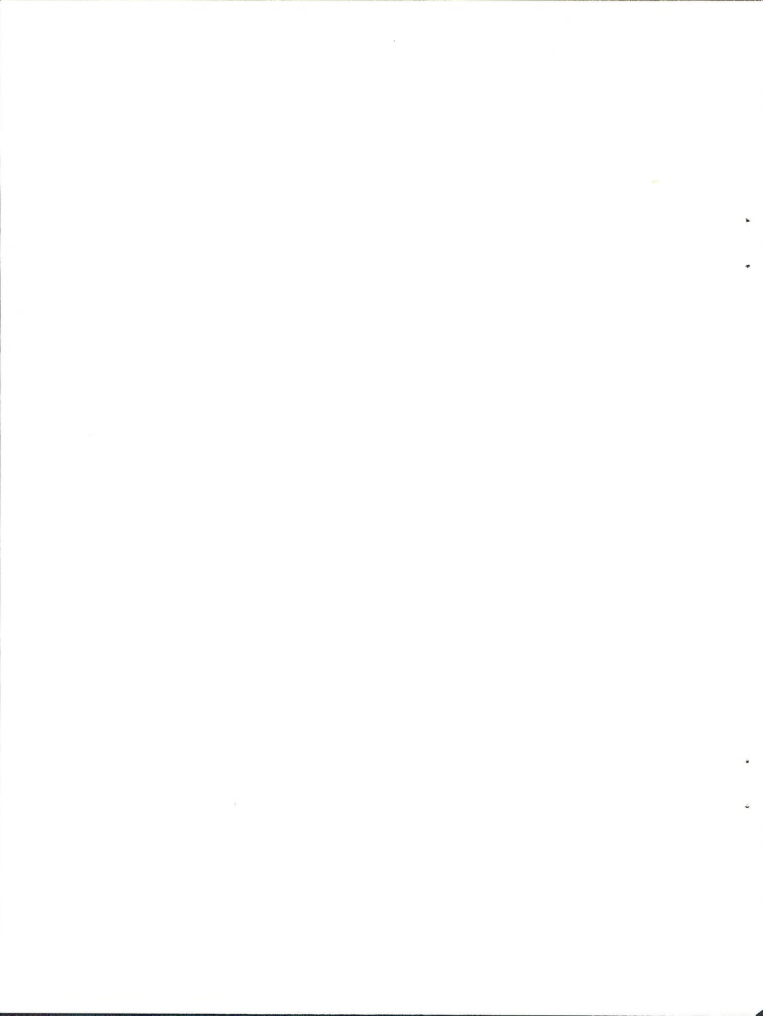
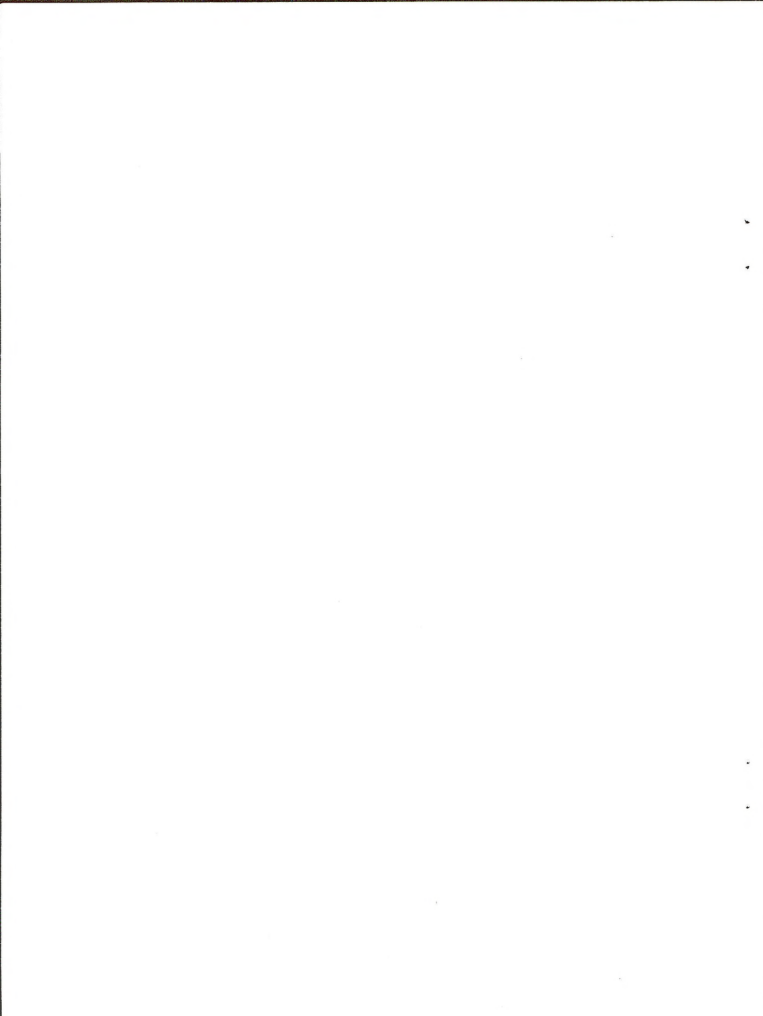


TABLE F, LEASES WITH NO PAST PRODUCTION AND NO PLANS FOR FUTURE PRODUCTION (NP)

State	No. Lses	No. Lessee	Type P.R.	Lease Comp.	Total Acreage	Private Surface Acres	Mining Method		Reserves (Mill. tons)		Less Than 5	Age of Leases, years				Greater Than 40
							No.	Lses	S	U		5-10	10-20	20-30	30-40	
Colorado	17	6	15	2	27,809.77	7,145.77	3	14	38.75	174.28	0	12	5	0	0	0
Montana	8	6	1	7	25,103.62	24,318.45	8	0	873.13	0	0	6	2	0	0	0
New Mexico	13	6	9	4	28,149.33	18,905.53	8	5	191.99	55.88	0	5	8	0	0	0
North Dakota	8	6	2	6	7,711.95	7,711.95	9	0	113.15	0	0	4	4	0	0	0
Utah	131	21	93	38	194,190.45	4,812.80	20	111	141.65	2568.84	4	84	38	5	0	0
Wyoming	62	21	21	41	128,070.39	86,552.65	37	24	5126.83	396.78	5	27	28	2	0	0
Total	239	66	141	98	411,011.52	149,447.15	85	154	6485.50	3195.78	9	138	85	7	0	0



G. Past Production No Plans For Future Production (PP)

There are 65 outstanding Federal coal leases in the six western coal States that have produced in the past, prior to 1974 - Table G. These leases make up 13 percent of the outstanding leases in the six States. Ownership of these leases is by 50 lessees. Most leases 64 percent, were obtained through competitive bidding. Only in New Mexico are preference right leases greater in number than competitive leases.

Total acreage is relatively small for this classification being only 28,242.57 acres or 4.1 percent of all leased acreage in these western States. Approximately 10 percent of this total acreage is private surface. Eighty-three percent of the leases were mined by underground methods. Only 11 leases were mined by surface mining methods. Cumulative production from these leases totals 23.36 million tons or 12 percent of past production from Federal leases. Nearly 96 percent of the recoverable reserves of these leases are mineable by underground methods. Only 15.80 million tons are recoverable by surface mining methods. The average recoverable reserves per lease ranges from 0.23 million tons in New Mexico to 11.14 million tons in Utah for underground mineable leases and 0.36 million tons in New Mexico to 2.27 million tons per lease in North Dakota for surface mineable leases. The average is 1.43 million tons per lease for surface mineable reserves and 6.80 tons per lease for underground mineable reserves.

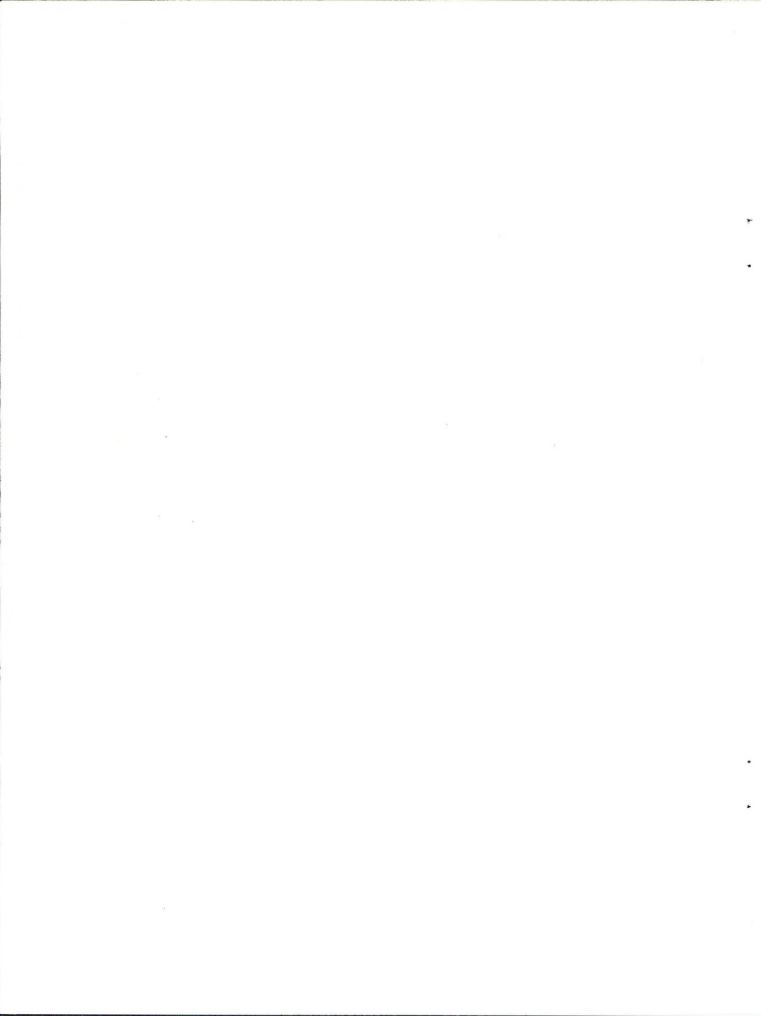
The age of these leases as a whole are old. Eighty-one percent are over 20 years old. Only 3 of these leases are under 10 years old. Twenty-five of the 65 leases are 30-40 years old, and 17 leases over 40 years old.



TABLE G - LEASES WITH PAST PRODUCTION AND NO PLANS FOR FUTURE PRODUCTION (PP)

State	No. Lses.	No. Lessees	Type Lease		Acreage	Private Surface Acres	Mining Method		Accum. (Mill. Tons) Prod.	Reserves (Mill. Tons)		Less Than	Age of Leases, years				Than 40
			Pr.	Comp.			S	U		S	U		5-10	10-20	20-30	30-40	
Colorado	11	9	3	8	1,484.74	460.72	0	11	3.39	1.90	11.44	0	0	1	3	3	4
Montana	3	3	1	2	200.00	120.00	3	0	0.16	<u>1/</u>	<u>1/</u>	0	0	0	1	1	1
New Mexico	10	9	6	4	920.70	400.00	2	8	0.27	0.72	1.89	0	1	0	1	5	3
North Dakota	4	4	0	4	840.34	840.34	4	0	5.34	<u>1/</u>	<u>1/</u>	0	0	2	1	0	1
Utah	31	19	9	22	23,876.79	921.78	0	31	14.04	0	345.61	0	2	4	6	12	7
Wyoming	6	6	4	2	920.00	120.00	2	4	0.16	2.40	7.56	0	0	1	0	4	1
Total	65	50	23	42	28,242.57	2,863.54	11	54	23.36	15.80	366.60	0	3	8	12	25	17

1/ Due to small number of lessees reserve figures deleted so as to not reveal possible proprietary information.





### III. Summary of lease Categories

The existing Federal coal leases in the six Western States of Colorado, Montana, New Mexico, North Dakota, Utah and Wyoming are classified into five categories based upon the leases past, present and future development plans. The five categories are Currently Producing, (CP), Past Production No plans for Future Production, (PP), Past Production With Plans for Future Production (PP,FP), No Past Production but With Plans for Future Production (FP) and No Past Production with No Plans for Future Production (NP).

Tables H and I show some details of existing Federal coal leases by category.

There are 465 outstanding Federal coal leases within the six western States, of which 49 percent of the leases have produced or have indicated they will be producing in the near future and 51 percent which have not produced in the past and have not indicated any plans for future production.

The 465 leases are owned by a total of 128 <sup>1/</sup> separate lessees. Of the lessees, 60 of them hold only one lease each, leaving 68 lessees with 405 leases.

Thirty-nine percent have leases in the PP category. Nineteen percent have leases in the PP, FP category. Twenty three percent have leases in the FP category and 52 percent hold leases in the NP category. Appendix A, gives a list of the top 20 lease holders giving number of leases, lessee and total number of acres for all states and individual States.

<sup>1/</sup> The 128 individual lessees is equivalent to the sum of 208 lessees in Table H because an individual lessee may own a lease in more than one category, thus an individual lessee will be counted more than once as the categories are summed.

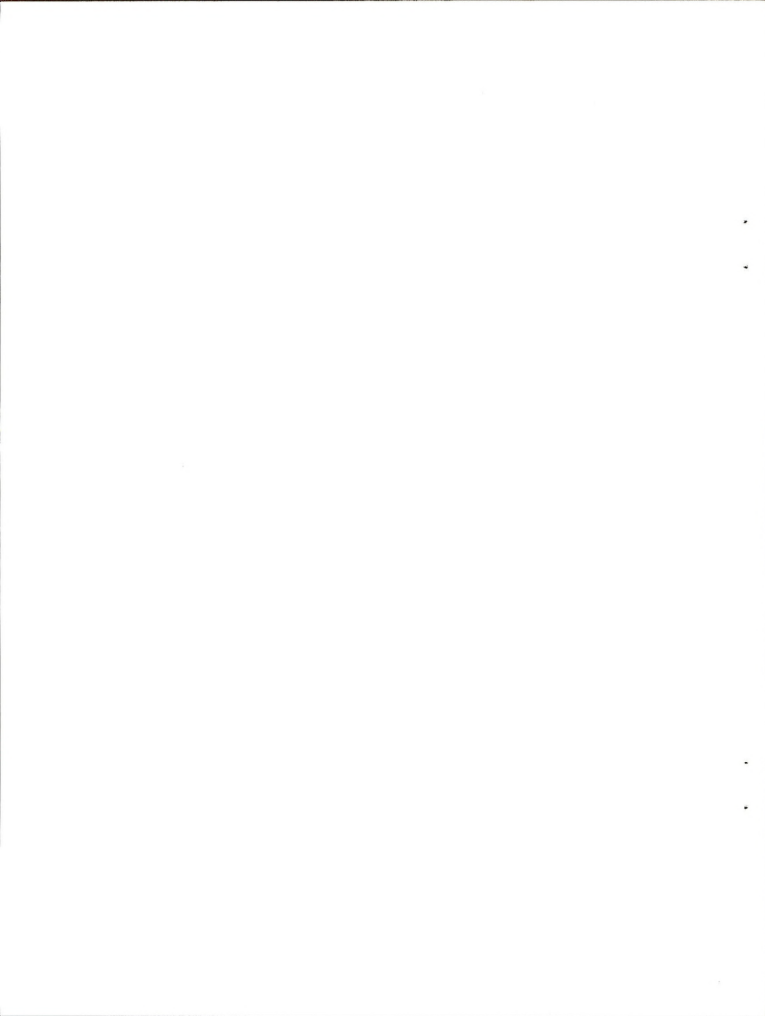


TABLE H - STATUS OF LEASES BY LEASE CATEGORY

Category	No. Leases	No. 1/ Lessees	Type Lease FE Comp.	Total Acreage	Private Surface Acres	Mining Method		1974 Production	Accum. Prod. (Mill. Tons)	Planned Production				Reserves		Less Than 5	Age of Leases, years			Greater Than		
						No. Leases	U			1975	1980	1985	1990	(Mill. Tons)	S		U	5-10	10-20	20-30	30-40	40
FP	65	50	23	42	28,242.57	2,863.54	11	54	-	23.36	-	-	-	-	15.80	366.69	0	3	10	10	25	17
CP	53	39	9	44	85,085.76	39,333.89	27	26	21,525,559	128.78	27.65	55.23	55.05	45.71	1,038.44	567.96	5	5	19	6	7	11
PP,FP	31	24	7	24	29,359.95	10,120.13	7	24	-	32.53	10.51	11.44	14.59	8.44	88.26	260.39	0	3	6	6	6	10
FF	79	29	36	43	128,712.64	59,666.92	18	61	-	-	6.12	59.06	75.49	64.90	3,033.17	1,114.49	2	34	41	2	0	0
NP	239	66	141	98	411,011.52	149,447.15	85	152	-	-	-	-	-	-	6,485.50	3,195.75	7	139	84	7	0	0
Total	467	208	217	250	681,812.44	261,431.63	148	317	21,525,559	184.67	44.28	125.73	145.13	119.05	10,661.17	5,505.31	14	184	160	31	38	38

FP - Past production no plans for future production

CP - Currently Producing

PP,FP - Past production, plans for future production

FP - No past production but with plans for future production

NP - No past production and no plans for future production

1/ Overlaps of Lessees Between Categories

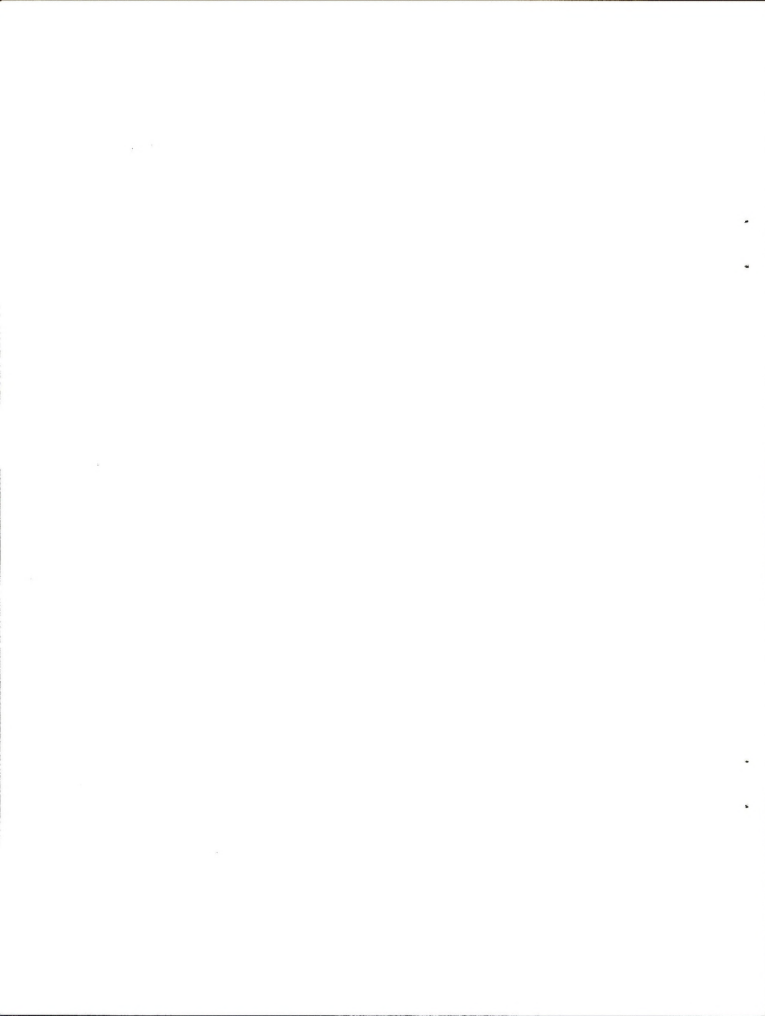
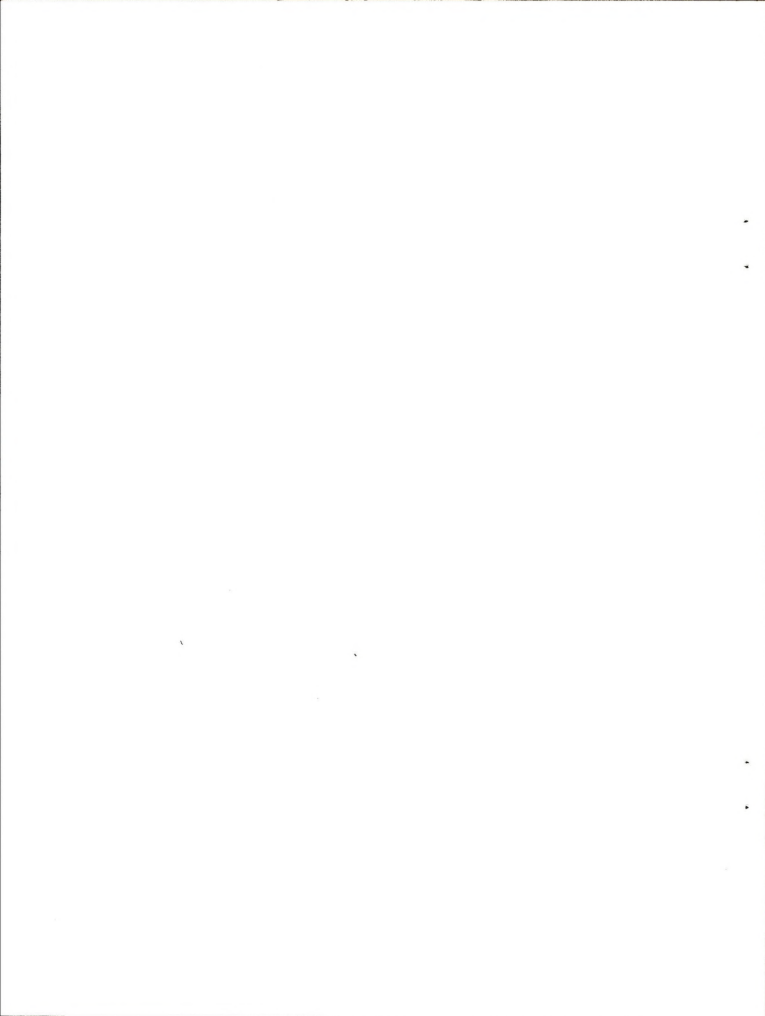


TABLE I. LEASES BY LEASE CATEGORY AS PERCENTAGE OF TOTALS

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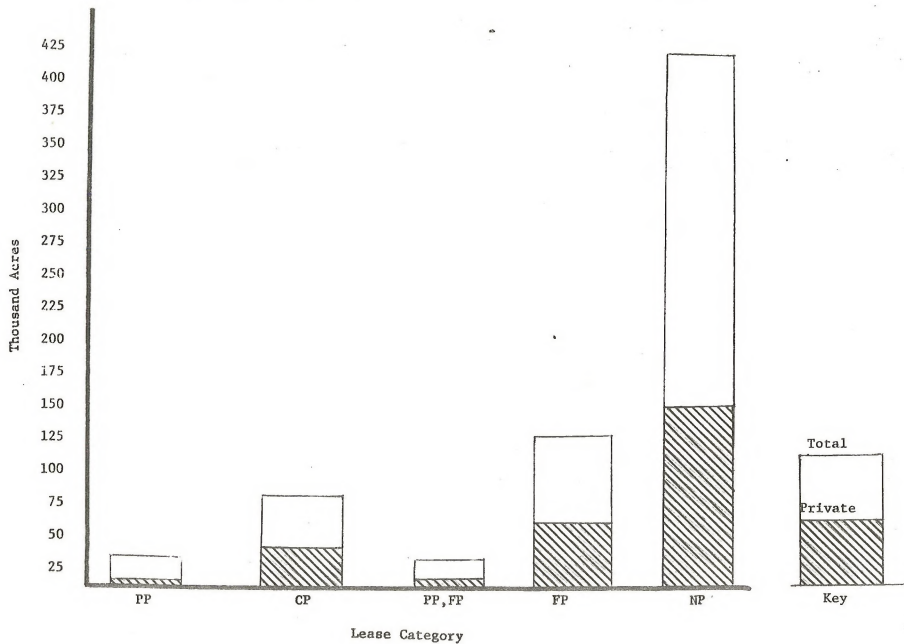


There are 217 leases obtained by preference right methods and 250 leases obtained competitively. Preference Right Leases make up 47 percent of all leases and competitive, 53 percent. Twenty-three percent of the preference right leases and 46 percent of the competitive leases have indicated production at present or in the near future. Moreover, 77 percent of the preference right leases and 55 percent of the competitive leases have not indicated any production plans - Table I. Thirty-one percent of all leases are preference right leases which have no indicated plans for future production and 20 percent of the total 467 leases are competitive leases which have indicated no plans for future production. This would seem to indicate that the performance with respect to production has been much better with competitive leasing than with preference right leasing, but further study is needed to determine to what extent.

Total acreage under lease is 681,812.44 acres of which 261,431.63 acres (38%) is private surface. With respect to individual categories it is found that 12 percent of the total acreage is in the currently producing category, 4 percent in PP, FP, 19 percent is FP and 61 percent in the NP category. In the private surface category 15 percent is currently producing, 1 percent in PP, 4 percent in PP, FP, 23 percent in FP and 57 percent of the private surface in the NP category. Figure 2 gives a graphical representation of total acreage and private surface acreage.

The average lease size for the CP category is 1605.39 acres, for PP 434.5 acres, for PP, FP 947.09 acres, for FP 1621.67 acres and for NP 1720 acres per lease on the average.

Figure 2 Total Acreage and Private Surface in Each Lease Category





Also the lease size increases as the age of the lease becomes less. The amount of private surface follows this same trend. There is a higher percentage of private surface in the currently and future indicated production categories than in the categories without future plans. On the average, competitive and preference right leases are about the same size, 1464.99 acres per lease for competitive and 1478.90 acres per lease for preference right leases. Appendix A, gives an indication of average lease size held by the large lessees.

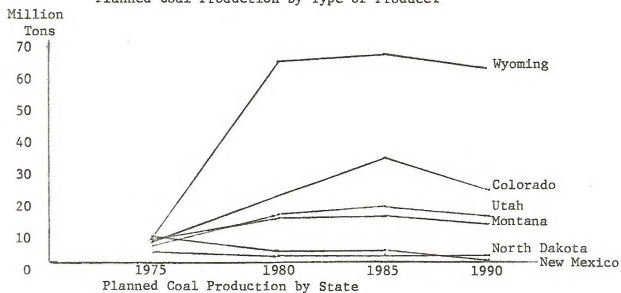
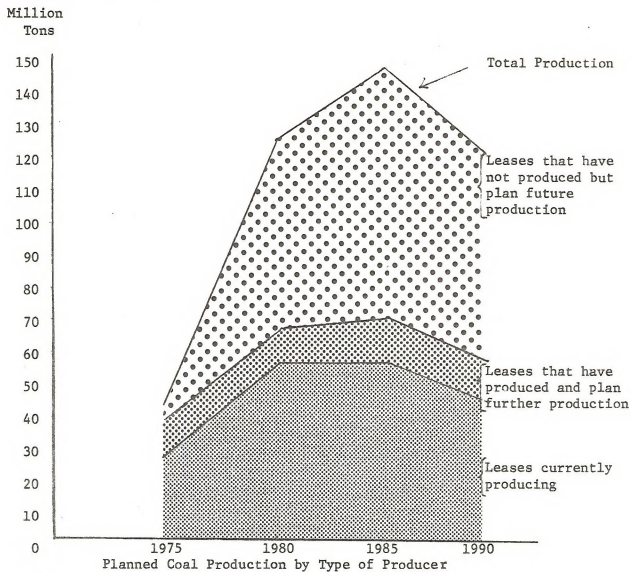
#### Future Production

With respect to future production, we find that leases covering 242 thousand acres, with 109 thousand acres of private surface ownership, have plans for extensive future production. Most of the expanded production will come from the surface mines of Wyoming. Colorado, Utah and Montana will increase production somewhat, while New Mexico and North Dakota production will decline over the next 15 years. The major increase in coal production illustrated in Figure 3 will come from the 79 leases that have not produced in the past. Fifty-three currently producing leases will increase output and 31 older leases that had no production in 1974 will again produce.

About two-thirds of the future coal production from the group of leases that have had no past production will come from new surface mines in Wyoming.

The currently producing leases projected production as a percentage of production of all leases, equals 62 percent of the 1975 production, 44 percent of the 1980 production, 38 percent of the 1985 and 37 percent of the 1990 production. Reserves in the CP category are 10 percent of surface

Figure - 3 Planned Coal Production from Federal Leases



mineable coal and 10 percent of underground mineable coal. Reserves average 38.46 million tons for surface mines and 21.84 million tons for underground.

#### Mining Method and Reserves

There are 148 leases classified as mineable by surface mining methods and 317 leases mineable by underground methods. These leases have produced 184.14 million tons in the past and 21.5 million tons in 1974. Their indicated annual production rate is 44.28 million tons by 1975, 125.73 million by 1980, 145.13 million tons by 1985, and 119.05 million by 1990. Reserves associated with these leases are 10,661.17 million tons recoverable by surface mining methods and 5,505.31 million tons by underground methods.

With respect to each category the following is found. Fifty-one percent of the currently producing leases are mined by surface methods and 49 percent by underground. These mines produced 70 percent of all past production and all the current production. Seventy-nine percent of the current production is from surface mines.

The PP, FP category contains 5 percent of the surface mineable leases and 8 percent of the underground mineable leases while containing only 1 percent of the surface mineable reserves and 5 percent of the underground reserves. Seventeen percent of past production came from this category and; 24 percent of the 1975, 9 percent of 1980, 10 percent of 1985 and 7 percent of 1990 indicated production will come from this category.

Coal reserves by production intentions of leaseholders broken down by States is illustrated in Table J. Nearly all the coal reserves of those leases that had produced in the past but have no future production plans is underground coal in Utah.

One-third of the coal reserves of the currently producing mines is surface coal in Wyoming. Two-thirds of the reserves of those leases that have not produced in the past but plan future production is surface coal in Wyoming.

Of the leases with no indicated future production plans, one-half is surface coal in Wyoming and one-fourth is underground coal in Utah.

TABLE J

Coal Reserves on Federal Leases

Category		Col.	Mont.	NM	ND	Utah	Wyo.	Total
Million of Recoverable Tons								
PP	s	1.9	1.7	.7	9.1	0	2.4	15.8
	u	11.4	0	1.9	0	345.6	7.6	366.5
CP	s	31.1	306.6	37.7	100.9	0	562.1	1038.4
	u	245.7	0	0	0	144.0	178.3	568.0
PP, FP	s	18.5	0	9.4	41.5	6.2	12.6	88.2
	u	86.3	0	0	0	155.4	18.7	260.4
FP	s	182.7	0	35.4	0	137.6	2677.5	3033.2
	u	866.3	0	0	0	145.7	102.5	1114.5
NP	s	38.8	873.1	192.0	113.1	141.7	5126.8	6485.5
	u	174.3	0	55.9	0	2568.8	396.8	3195.8
Total	s	273.0	1171.4	275.2	264.6	285.5	8381.4	10601.1
	u	1384.0	0	57.8	0	3359.5	703.9	5505.2

The FP category contains 12 percent of the surface minable and 19 percent of the underground mineable leases. These leases contain 28 percent of the total surface mineable reserves and 20 percent of the underground mineable reserves, averaging 168.51 million tons and 18.27 million tons respectively. Fourteen percent of the 1975 indicated production, 47 percent of the 1980, 52 percent of the 1985 and 55 percent of the 1990 indicated production is within this category.

The NP category contains 57 percent of the surface mineable leases and 48 percent of the underground mineable leases while containing 61 percent of total surface mineable reserves and 58 percent of the underground mineable reserves. The average being 76.30 million tons and 19.73 million tons per surface and underground mineable lease respectively.

#### Age

The age of the leases within the categories vary widely and span a 50 year period. The greatest number of leases, though, are in the 5-10 and 10-20 year old age group. These account for 74 percent of all leases.

Seventy nine percent of the PP category leases are over 20 years old as are 70 percent of the PP, FP leases. The average age of lease for these two groups is 32 years and 30 years of age respectively.

Roughly half of the leases in the CP category are under 20 years old and half are over 20 years old, the average age being 23 years old. The FP and NP categories are relatively young with the latter being the youngest. Ninety-eight percent of the FP and NP categories leases are under 20 years old. They average 12 and 10.5 years old respectively.

#### Lease Category By State

An aspect which has been presented, but only in an unconsolidated way, is the categories of leases within a State.

A more detailed tabular presentation is given in Appendix B.

Briefly, it is found that in Colorado 75 percent of the leases have indicated plans for future production and 25 percent have no plans for future production. In Montana 35 percent of the leases have indicated future production. In New Mexico only 18 percent of the leases have indicated future production, in North Dakota 32 percent, in Utah 19 percent, future production, and in Wyoming 26 percent have indicated future production.

#### Conclusion and Interpretation of Coal Lease Data

The leases that have ceased production have done so primarily because of their small size, small coal reserves, small output and because 96 percent of their coal reserves is recoverable only by underground mining methods. The requirements of the Federal Coal Mine and Safety Act of 1969, as amended, made most of these mines uneconomical to operate or to bring up to standard. Also 25 percent of these leases are over 40 years old and 55 percent are over 30 years old, thus, many of the lease may be due to expire within the near future. The cumulative production of these 65 leases is only 23.4 million tons, averaging less than 360 thousand tons

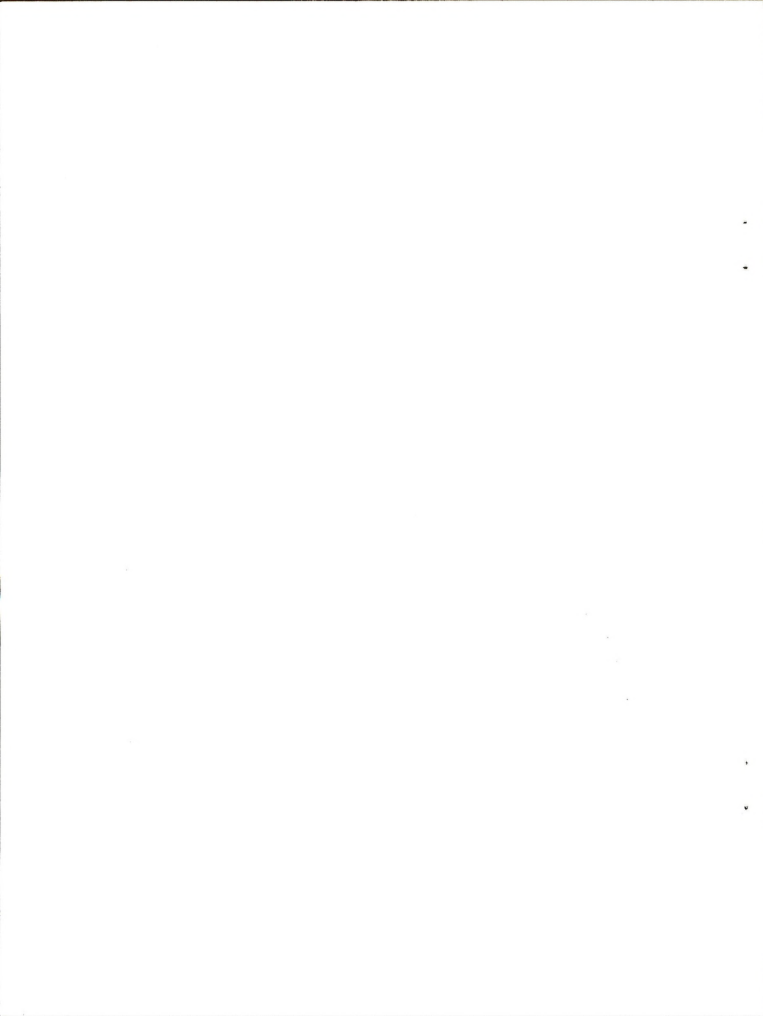
per lease which is small and probably inefficient and non-competitive when compared to today's scale of production.

The leases that have temporarily stopped producing, but plan to again produce have many of the characteristics of those leases that have ceased producing and have no future plans. The difference is that the leases that have stopped producing only temporarily have a much larger percentage of surface recoverable coal reserves than the leases that seem to have stopped producing permanently. Also, a larger proportion (77 percent), of the leases that plan to resume production were obtained through the competitive method, which may indicate their seriousness of actually producing coal rather than speculating or merely obtaining a land position.

Those leases that plan to start producing coal for the first time will do so because they have tremendous reserves of surface recoverable coal, mostly in Wyoming.

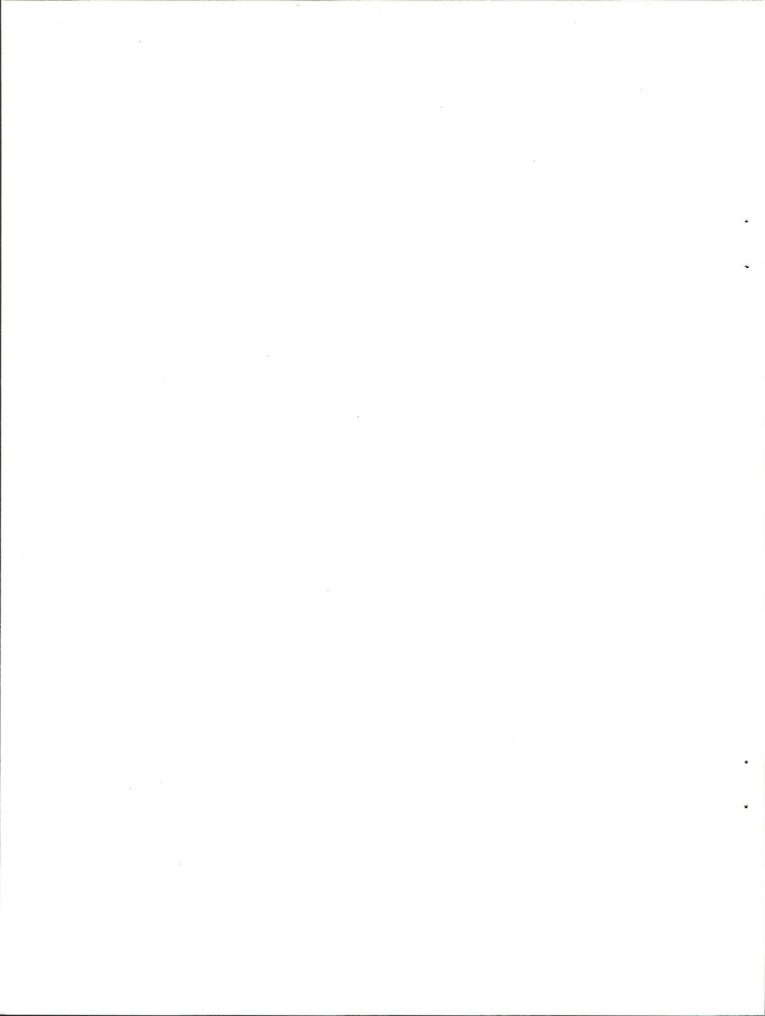
The newer leases that do not plan any production also have huge surface coal reserves in Wyoming. The leases without production plans hold large quantities of underground reserves, nearly all in Utah, which is not currently competitive with surface recoverable coal.

The major coal production from Federal lands in the next 15 years according to responses on the USGS questionnaire will come from surface deposits in Wyoming, with smaller amounts from Colorado, Utah and Montana.





## APPENDIX A



Concentration of Federal Coal Leaseholds  
Top 20 Lessees, U.S. Totals

Lessee	(Parent Company)	Total Acreage Under Fed. Coal Lease	Total Federal Leases	% of Total Fed. Coal Lse. Acreage
1. Peabody Coal Co.	(Kennecott Copper Co.)	83,778 acres	49 leases	10.7%
2. Garland Coal & Mining Co.		45,993	27	5.9
3. Consolidation Coal Co. (Continental Oil Co.)		45,452	26	5.8
4. Resources Co. et al (Ariz. Pub. Serv. & San Diego Gas & Elec.)		39,355	20	5.0
5. Pacific Power & Light		35,079	19	4.5
Top 5 Total		249,657 acres	141 leases	31.9%
6. El Paso Natural Gas		27,019 acres	15 leases	3.5%
7. Utah International, Inc.		24,228	26	3.1
8. Kemmerer Coal Co.	(Lincoln Corp.)	22,854	16	2.9
9. Richard D. Bass		20,701	1	2.6
10. Atlantic Richfield		19,186	6	2.5
Top 10 Total		363,645 acres	205 leases	46.4%
11. U.S. Steel Corp.		18,959 acres	20 leases	2.4%
12. Consol. Coal & Kemmerer Coal Co. (Cont. Oil & Lincoln Corp.)		18,746	10	2.4%
13. Carter Oil Co.	(Exxon Corp.)	15,491	3	2.0
14. Industrial Resources, Inc.		14,929	6	1.9
15. Sun Oil Co.		14,680	1	1.9
Top 15 Total		446,450 acres	245 leases	57.0%
16. Kaiser Steel Corp.		14,617 acres	9 leases	1.9%
17. Decker Coal Co.	(Pacific Power & Light)	13,610	3	1.7
18. Kerr McGee Corp.		13,289	7	1.7
19. Evans Coal Co.		12,622	8	1.6
20. Western Coal Co.		12,289	6	1.6
Top 20 Total		512,877 acres	279 leases	65.5%
U.S. Total		781,763 acres	536 leases	100.0%

CONCENTRATION OF FEDERAL COAL LEASEHOLDS  
Top 5 and 10 Lessees, By State

State	Federal Lessee	Fed. Lse. Acreage in State	Fed. Lse's. in State	% of Fed. Lse. Acreage in State	% of Total Fed. Coal Lease Acreage
ESO					
	1. Republic Steel Corp (Ala.)	2,388 acres	1 lease	59%	less than 1%
	2. Peavley & Smith (Kty.)	1,282	1	32	less than 1
	3. Peabody Coal Co. (Ala.)	200	1	5	less than 1
	4. Collins (ohio)	144	1	4	less than 1
	5. Helen Mng. Co. (Penn.)	80	2	1	less than 1
	Top 5 Total	4,094 acres	6 leases	100%	.5%
	State Total	4,094 acres	6 leases	100%	.5%

ALASKA

1. Isibelli Coal Mine, Inc.	1,915 acres	2 leases	74%	less than 1%
2. Alaska State Bank	600	1	23	less than 1
3. Estate of B. Agostino	79	1	3	less than 1
Top 3 Total	2,594 acres	4 leases	100%	.3%
State State	2,674 acres	4 leases	100%	.3%

CALIFORNIA

1. Dixie & Reeves	80 acres	1 lease	100%	0%
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COLORADO

1. Kemmerer Coal Co.	16,269 acres	10 leases	13%	2%
2. Industrial Resources, Inc.	14,929	6	12	2
3. Peabody Coal Co.	10,306	8	8	1
4. Consolidation Coal Co.	10,015	7	8	1
5. U.S. Steel Corp.	9,471	15	8	1
Top 5 Total	60,990 acres	46 leases	49%	7.8%

CONCENTRATION OF FEDERAL COAL LEASEHOLDS  
Top 5 and 10 Lessees, By State

State	Federal Lessee	Fed. Lse. Acreage in State	Fed. Lse's. in State	% of Fed. Lse. Acreage in State	% of Total Fed. Coal Lease Acreage
	6. Utah International, Inc.	8,071 acres	6 leases	7%	1%
	7. Atlantic Richfield	7,462	3	6	less than 1
	8. Mid-Cont. Coal & Coke	6,065	8	5	less than 1
	9. Garland Coal & Mining Co.	5,433	3	4	less than 1
	10. <u>United Electric Coal Co.</u>	<u>4,842</u>	<u>2</u>	<u>4</u>	<u>1</u>
	Top 10 Total	92,864 acres	68 leases	76%	11.9%
	State Total	121,470 acres	113 leases	100%	15.6%

MONTANA

	1. Decker Coal Co.	13,610 acres	3 leases	38%	2%
	2. Western Energy Co.	7,073	2	20	less than 1
	3. U.S. Steel Corp.	5,096	2	14	less than 1
	4. Peabody Coal Co.	4,307	1	12	less than 1
	5. <u>Pacific Power &amp; Light Co.</u>	<u>3,067</u>	<u>2</u>	<u>8</u>	<u>less than 1</u>
	Top 5 Total	33,153 acres	10 leases	92%	4.2%
	State Total	36,232 acres	17 leases	100%	4.6%

NEW MEXICO

	1. Western Coal Co.	12,289 acres	6 leases	30%	2%
	2. Consolidation Coal Co.	9,303	5	23	1
	3. Gulf Oil Corp.	8,156	4	20	1
	4. Seneca Oil Co.	6,336	1	15	less than 1
	5. <u>Peabody Coal Co.</u>	<u>2,044</u>	<u>1</u>	<u>5</u>	<u>less than 1</u>
	Top 5 Total	32,128 acres	17 leases	95%	4.9%
	State Total	40,958 acres	28 leases	100%	5.2%

CONCENTRATION OF FEDERAL COAL LEASEHOLDS  
Top 5 and 10 Lessees, By State

State	Federal Lessee	Fed. Lse. Acreage in State	Fed. Lse's. in State	% of Fed. Lse. Acreage in State	% of Total Fed. Coal Lease Acreage
NORTH DAKOTA					
	1. Knife River Coal Co.	7,792 acres	6 leases	48%	less than 1%
	2. North American Coal Co.	2,843	3	17	less than 1
	3. Kaukol-Noonan, Inc.	2,486	2	15	less than 1
	4. Kerr McGee Corp.	2,034	1	12	less than 1
	5. Consolidation Coal Co.	601	3	4	less than 1
	Top 5 Total	15,756 acres	15 leases	97%	2.0%
	State Total	16,235 acres	18 leases	100%	2.1%
OKLAHOMA					
	1. Garland Coal & Mining Co.	37,115 acres	21 leases	43%	5%
	2. Evans Coal Co.	12,622	8	15	2
	3. Lone Star Steel Co.	10,172	6	12	1
	4. Petroleum Int'l., Inc.	9,110	3	11	1
	5. Cameron Coal Co.	4,464	3	5	less than 1
	Top 5 Total	73,438 acres	41 leases	84%	9.4%
	State Total	87,014 acres	53 leases	100%	11.1%
OREGON					
	1. Pacific Power & Light Co.	4,866 acres	2 leases	90%	less than 1%
	2. Mandrones et al.	538	1	10	less than 1
	State Total	5,403 acres	3 leases	100%	.7%

CONCENTRATION OF FEDERAL COAL LEASEHOLDS  
Top 5 and 10 Lessees, By State

State	Federal Lessee	Fed. Lse. Acreage in State	Fed. Lse's. in State	% of Fed. Lse. Acreage in State	% of Total Fed. Coal Lease Acreage
UTAH					
	1. Peabody Coal Co.	43,160 acres	31 leases	16%	6%
	2. Resources Co., et al.,	39,355	20	15	5
	3. El Paso Natural Gas	27,019	15	10	3
	4. Consolidation Coal Co.	25,533	11	10	3
	5. Consol. Coal & Kemmerer Coal Co.	18,746	10	7	2
	Top 5 Total	153,813 acres	87 leases	58%	20%
	6. Utah International, Inc.	16,157 acres	20 leases	6%	2%
	7. Kaiser Steel Corp.	14,617	9	5	2
	8. Nevada Electric	10,377	8	4	1
	9. North American Coal	8,905	8	3	1
	10. Jessee H. Knight	7,850	4	3	1
	Top 10 Total	211,719 acres	136 leases	79%	27%
	State Total	268,555 acres	197 leases	100%	34%
WASHINGTON					
	1. Wash. Irrigation & Devel. Co.	521 acres	2 leases	100%	less than 1%

CONCENTRATION OF FEDERAL COAL LEASEHOLDS  
Top 5 and 10 Lessees, By State

State	Federal Lessee	Fed. Lse. Acreage in State	Fed. Lse's. in State	% of Fed. Lse. Acreage in State	% of Total Fed. Coal Lease Acreage
WYOMING					
	1. Pacific Power & Light Co.	27,146 acres	15	14%	3%
	2. Peabody Coal Co.	23,761	7	12	3
	3. Richard D. Bass	20,701	1	10	3
	4. Carter Oil Co.	15,491	3	8	2
	5. Sun Oil Co.	14,680	1	7	2
	Top 5 Total	101,779 acres	27	51%	13%
	6. Atlantic Richfield Co.	11,724 acres	3	6%	2%
	7. Ark Land Co.	11,656	8	6	1
	8. Kerr McGee	11,255	6	6	1
	9. Reynolds Mining Corp.	9,418	5	5	1
	10. Energy Development Co.	8,683	1	4	1
	Top 10 Total	154,515 acres	50	77%	20%
	State Total	199,944 acres	91	100%	26%



## APPENDIX B

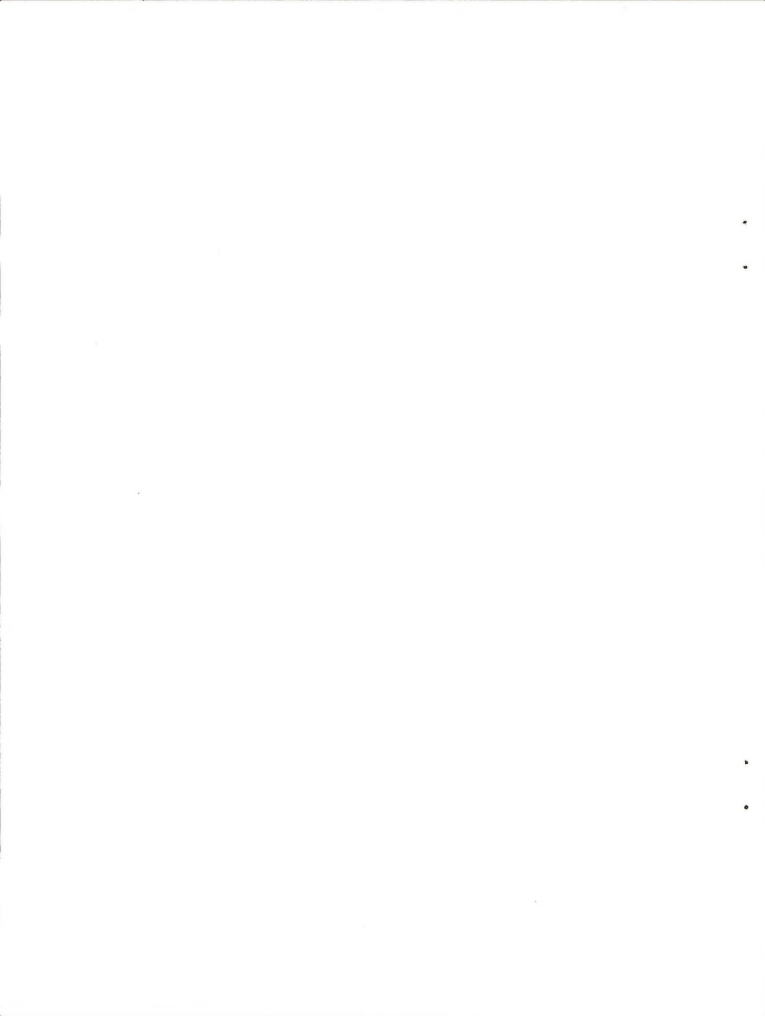


TABLE B-1 STATUS OF COLORADO LEASES BY LEASE CATEGORY

Category	No. Leases	No. Lessees	Type Lease		Total Acreage	Private Surface, Acres	Mining Method		1974 Production	Accum. Prod. (Mill. Tons)	Planned Production (Mill. Tons)				Reserves (Mill. Tons)		Less Than 5	5-10	10-20	20-30	30-40	Greater Than 40
			FR	Comp.			S	U			1975	1980	1985	1990	S	U						
FP	11	9	3	8	1,484.74	460.72	0	11	-	3.39	-	-	-	-	1.90	11.44	0	0	1	3	3	4
CP	14	11	3	11	14,890.14	7,204.95	2	12	2,312,121	20.20	1.65	6.26	7.55	6.09	31.11	245.66	1	1	4	1	4	3
FP,FP	15	13	5	10	9,410.51	3,835.92	0	15	-	3.31	2.21	5.88	8.24	5.27	18.34	86.34	0	0	3	4	3	5
FP	56	17	30	26	67,875.67	35,959.15	4	52	-	-	4.32	12.14	19.72	14.06	182.74	866.33	0	28	27	1	0	0
MP	17	6	15	2	27,409.77	7,345.77	3	14	-	-	-	-	-	-	38.75	174.28	0	12	5	0	0	0
Total	113	56	56	57	121,470.83	54,606.51	9	104	2,312,121	26.90	8.18	24.28	35.51	25.42	279.98	1,384.05	1	41	40	9	10	12

TABLE B-2 STATUS OF MONTANA LEASES BY LEASE CATEGORY

Category	No. Leases	No. Lessees	Type Lease	FR Comp.	Total Acreage	Private Surface, Acres	Mining Method		1974 Production	Accum. Prod. (Mill. Tons)	Planned Production (Mill. Tons)				Reserves (Mill. Tons)		Less Than 5	5-10	10-20	20-30	30-40	Greater Than 40
							S	U			1975	1980	1985	1990	S	U						
FF	3	3	1	2	209.00	120.00	3	0	-	0.16	-	-	-	-	1/	1/	0	0	0	1	1	1
CF	6	5	1	5	10,928.65	10,528.65	6	0	4,486,418	22.96	8.50	15.50	15.70	13.70	1/	1/	1	0	4	0	0	1
FF,FP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MP	8	6	1	7	25,103.62	24,318.45	8	0	-	-	-	-	-	-	873.13	0	0	6	2	0	0	0
Total	17	14	3	14	36,232.27	34,967.10	17	0	4,486,418	23.12	8.5	15.50	15.70	13.70	1,179.85	0	1	6	6	1	1	2

1/ Due to small number of lessees reserve figures deleted so as to not reveal possible proprietary information.

TABLE B-3 STATUS OF NEW MEXICO LEASES BY LEASE CATEGORY

Category	No. Leases	No. Lessees	Type Lease		Total Acreage	Private Surface, Acres	Mining Method		1974 Production	Accum. Prod. (Mill. Tons)	Planned Production (Mill. Tons)				Reserves (Mill. Tons)		Less Than 5	5-10	10-20	20-30	30-40	Greater Than 40
			PH	Comp.			S	U			1975	1980	1985	1990	S	U						
FP	10	9	6	4	920.70	400.70	2	8	-	0.27	-	-	-	-	0.72	1.89	0	1	0	1	5	3
CP	2	2	2	0	4,272.36	4,272.36	2	0	1,053,218	1.23	1/	1/	1/	1/	1/	1/	0	0	2	0	0	0
FP,FP	1	1	1	0	2,570.13	1,978.19	1	0	-	0.71	1/	1/	1/	1/	1/	1/	0	0	1	0	0	0
FP	2	1	0	2	4,365.60	641.00	2	0	-	-	1/	1/	1/	1/	1/	1/	0	0	2	0	0	0
NP	13	6	9	4	28,149.53	18,905.53	8	5	-	-	-	-	-	-	191.99	55.88	0	5	8	0	0	0
Total	28	19	18	10	40,958.12	26,197.78	15	13	1,053,218	2.21	9.70	3.00	4.00	0	275.21	57.77	0	6	13	1	5	3

1/ Due to small number of lessees reserve and production figure deleted so as to not reveal possible proprietary information.

TABLE B-4 STATUS OF NORTH DAKOTA LEASES BY LEASE CATEGORY

Category	No. Leases	No. Lessees	Type Lease		Total Acreage	Private Surface, Acres	Mining Method		1974 Production	Accum. Prod. (Mill. Tons)	Planned Production (Mill. Tons)				Reserves (Mill. Tons)		Less Than		10-20	20-30	30-40	Greater Than 40
			PT	Comp.			S	U			1975	1980	1985	1990	S	U	5-10	5-10				
FP	4	4	0	4	840.34	840.34	4	0	-	5.34	-	-	-	-	9.08	0	0	0	2	1	0	1
CP	4	3	0	4	4,997.44	4,997.44	4	0	981,878	13.02	1/	1/	1/	1/	1/	0	1	0	1	1	0	1
FP,FP	2	2	0	2	2,726.02	2,726.02	2	0	-	1.00	1/	1/	1/	1/	1/	0	0	1	1	0	0	0
FP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NP	8	6	2	6	7,761.95	7,711.95	9	0	-	-	-	-	-	-	113.15	0	1	4	4	0	0	0
Total	18	15	2	16	16,325.75	16,275.75	19	0	981,878	19.36	2.75	1.65	1.65	1.65	264.70	0	2	5	8	2	0	2

1/ Due to small number of lessees reserve and production figures deleted so as to not reveal possible proprietary information.

TABLE B-5 STATUS OF UTAH LEASES BY LEASE CATEGORY

Category	No. Leases	No. Lessees	Type	Lease PR Comp.	Total Acreage	Private Surface, Acres	Mining Method		1974 Production	Accum. Prod. (Mill. Tons)	Planned Production (Mill. Tons)				Reserves (Mill. Tons)		less Than 5	5-10	10-20	20-30	30-40	Greater Than 40
							S	U			1975	1980	1985	1990	S	U						
PP	31	19	9	22	23,876.79	2,441.93	0	31	-	16.04	-	-	-	-	0	345.61	0	2	4	6	12	7
CP	14	10	0	14	18,331.65	6,008.79	0	14	3,152,353	41.25	3.64	4.60	4.63	4.94	0	144.00	1	1	3	4	2	3
PP,PP	10	6	1	9	12,221.75	2,624.28	2	8	-	24.09	1.38	4.49	5.28	2.10	6.20	155.35	0	2	0	2	3	3
FP	12	6	0	13	18,334.75	640.83	7	6	-	-	0.77	6.96	9.66	8.13	137.60	145.70	1	1	10	1	0	0
NP	131	21	94	37	195,790.45	1,619.17	20	109	-	-	-	-	-	-	141.65	2568.84	2	84	38	5	0	0
Total	199	62	104	95	268,555.39	13,335.00	29	168	3,152,353	79.38	5.79	16.05	19.57	15.17	285.45	3359.50	4	90	55	18	17	13

TABLE B-6 STATUS OF WYOMING LEASES BY LEASE CATEGORY

Category	No. Leases	No. Lessees	Type Lease		Total Acreage	Private Surface, Acres	Mining Method		1974 Production	Accum. Prod. (Mill. Tons)	Planned Production (Mill. Tons)				Reserves (Mill. Tons)		Less Than 5	5-10	10-20	20-30	30-40	Greater Than 40
			PR	Comp.			S	U			1975	1980	1985	1990	S	U						
PP	6	6	4	2	920.00	120.00	2	4	-	0.16	-	-	-	-	2.40	7.56	0	0	1	1	3	1
CP	13	8	3	10	30,985.42	6,800.42	13	0	9,539,571	30.12	7.95	25.31	25.26	19.67	562.10	187.30	1	3	5	1	0	3
PP,FP	3	2	0	3	2,431.54	680.00	2	1	-	2.88	1/	1/	1/	1/	1/	1/	0	0	1	0	0	0
FP	8	5	6	2	37,536.62	23,066.77	5	3	-	-	1/	1/	1/	1/	1/	1/	1	4	3	0	0	0
NP	62	21	21	41	128,070.39	86,552.65	37	24	-	-	-	-	-	-	5,126.83	396.78	4	27	28	2	0	0
Total	92	42	34	58	199,944.21	117,219.84	59	32	9,539,571	33.16	9.36	65.25	68.70	63.11	8,381.44	703.60	6	34	38	4	3	6

1/ Due to small number of lessees reserve and production figure deleted so as to not reveal possible proprietary information.



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